

H2A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re application of:

JAMES F. KRAMER

Serial No. to be announced

Filed: November 15, 1999

For: A FORCE FEEDBACK AND  
TEXTURE SIMULATING  
INTERFACE DEVICE

Examiner: D. Underwood

Art Unit: 3652

San Francisco, CA 94111

Date: November 15, 1999

jc617 U.S. PTO  
09/439766  
11/15/99



Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

This is a request for filing a

- Original
- Continuation
- Divisional
- Continuation-in-part

application under 37 C.F.R. 1.53(b), in the name of James F. Kramer of Palo Alto, California, for **A FORCE FEEDBACK AND TEXTURE SIMULATING INTERFACE DEVICE**. This application claims priority to pending application Serial No. 08/858,737 filed May 19, 1997, which is a continuation of application Serial No. 08/373,531 filed 1/7/95, which was a continuation of Serial No. 07/929,895 filed 8/10/92, which was a continuation-in-part of Serial No. 07/474,168 filed 2/2/90, U.S. Patent No. 5,184,319.

1. (a)  Enclosed is a new application.  
(b)  Enclosed is a continuation-in-part application.  
(c)  Enclosed is a copy of the prior application.
2. (a)  Enclosed is a new Declaration.

(b)  Enclosed is a copy of the prior executed Declaration as originally filed.

3. (a)  Enclosed is a Small Entity Affidavit.

(b)  A Small Entity Affidavit is of record in the prior application.

4.  The filing fee is calculated below:

Claims as filed in the prior application, less any claims canceled by amendment below:

FOR:	(Col. 1)	(Col. 2)	<u>SMALL ENTITY</u>			OTHER THAN A <u>SMALL ENTITY</u>		
	<u>NO. FILED</u>	<u>NO. EXTRA</u>	<u>RATE</u>	<u>Fee</u>	OR	<u>RATE</u>	<u>Fee</u>	
BASIC FEE				\$380	OR		\$760	
TOTAL CLAIMS	<u>8</u> - 20 = * <u>0</u>		x 9 = \$		OR	x 18 = \$		
INDEP CLAIMS	<u>1</u> - 3 = * <u>  </u>		x 39 = \$		OR	x 78 = \$		
<input type="checkbox"/> [ ] MULTIPLE DEPENDENT CLAIM PRESENTED			<u>+135</u> = \$		OR	<u>+270</u> = \$		
*If the difference in Col. 1 is less than zero, enter "0" in Col. 2.			<u>  </u>			<u>  </u>		

5.  Our check no. 4904 in the amount of \$380.00 is enclosed.

*NE*

6.  Cancel in this application original claims 24-29 of the prior application before calculating the filing fee. (At least one independent claim must be retained for filing purposes.)

7.  Amend the specification by inserting before the first line the sentence:

*is a continuation of*  
-This application claims priority to pending application Serial No. 08/858,737 filed May 19, 1997, which is a continuation of application Serial No. 08/373,531 filed 1/7/95, which was a continuation of Serial No. 07/929,895 filed 8/10/92, which was a continuation-in-part of Serial No. 07/474,168 filed 2/2/90, U.S. Patent No. 5,184,319.

8. (a)  34 sheets of informal drawings (Figs. 1-28F) are enclosed.

(b)  Formal drawings are enclosed.

9. (a)  Priority of application Serial No. \_\_\_\_\_ filed on \_\_\_\_\_ in \_\_\_\_\_ is claimed under 35 U.S.C. 119.

(b)  The certified copy has been filed in prior application Serial No. \_\_\_\_\_ filed on \_\_\_\_\_.

10.  The prior application is assigned of record to Virtual Technologies, Inc.  
\_\_\_\_\_.  
\_\_\_\_\_

11. X The power of attorney in the prior application is to:

FLEHR HOHBACH TEST  
ALBRITTON & HERBERT LLP  
4 Embarcadero Center #3400  
San Francisco, CA 94111

- (a) X The power appears in the original papers in the prior application.
- (b)    Since the power does not appear in the original papers, a copy of the power in the prior application is enclosed.
- (c)    A new power has been executed and is enclosed.
- (d)    Address all future communications to:

R. Michael Ananian  
FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP  
Suite 3400, Four Embarcadero Center  
San Francisco, California 94111-4187  
Telephone: (650) 494-8700

12.    A preliminary amendment is enclosed. (Claims added by this amendment have been properly numbered consecutively beginning with the number next following the highest numbered original claim in the prior application.)
13. X I hereby verify that the attached papers are a true duplicate of prior application Serial No. 08/858,737 filed May 19, 1997.

Date: 15 November 1999

R. Michael Ananian

R. Michael Ananian, Reg. No. 35,050

FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP  
4 Embarcadero Center #3400  
San Francisco, CA 94111-4187  
Ph: (650) 494-8700 Fax: (650) 494-8771 1000426

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. A-65052-4/BIR/RMA

Anticipated Classification of this Application:

Class: Subclass:

Prior Application

Examiner: Underwood, Donald W.

Art Unit:3617

**Box CPA FEE**

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

This is a request for filing a Continued Prosecution Application under 37 C.F.R. 1.53(d) of pending application Serial No. 08/858,737 filed on 19 May 1997 in the name of James F. Kramer (Names of ALL Applicants) for A Force Feedback and Texture Simulating Interface Device (Title of Invention).

(PLEASE NOTE: FILING OF THIS FORM RESULTS IN AUTOMATIC ABANDONMENT OF THE PARENT APPLICATION. THIS FORM CANNOT BE USED AFTER THE ISSUE FEE IN THE PARENT APPLICATION HAS BEEN PAID.)

1. (a)  Enclosed is a Small Entity Affidavit.
- (b)  A Small Entity Affidavit is of record in the prior application.
2.  The filing fee is calculated below:

Claims remaining in the application after entry of any amendments under 37 C.F.R. 1.116 unentered in the prior application and less any claims canceled by amendment below:

ENTTY	(Col. 1)	(Col. 2)	OTHER THAN A			
			SMALL ENTITY	SMALL		
FOR:	<u>NO FILED</u>	<u>NO EXTRA</u>	<u>RATE</u>	<u>Fee</u>	<u>OR</u>	<u>RATE</u>
BASIC FEE				\$395	OR	
TOTAL CLAIMS	<u>15</u> - <u>20</u> =	* <u>0</u>	x 11 =	<u>\$0</u>	OR	x 22 =
INDEP CLAIMS	<u>3</u> - <u>3</u> =	* <u>0</u>	x 41 =	<u>\$0</u>	OR	x 82 =
[ ] MULTIPLE DEPENDENT CLAIM PRESENTED			+ <u>135</u> =	<u>\$</u>	OR	+ <u>270</u> =
*If the difference in Col. 1 is less than zero, enter "0" in Col. 2.			TOTAL	<u>\$395</u>	OR	TOTAL
						\$

jc617 U.S. PRO  
09/439766



11/15/99

EM445773227US

SIGNED

- RT
3.  The Commissioner is hereby authorized to charge any additional fees which may be required, including extension fees, or credit any overpayment to Deposit Account No. 06-1300 (Order No. A-65052-4/BIR/RMA).
4.  Our check in the amount of \$ 395.00 is enclosed.
5.  Cancel in this application original claims \_\_\_ of the prior application before calculating the filing fee. (At least one independent claim must be retained for filing purposes.)
6.  Enter the amendment under 37 C.F.R. 1.116 filed by facsmile on 28 May 1998 unentered in the prior application.
7.  Formal drawings to be substituted for the informal drawings filed with the prior application are enclosed.
8.  A preliminary amendment is enclosed. (Claims added by this amendment have been properly numbered consecutively beginning with the number next following the highest numbered original claim in the prior application.)
9.  A supplemental declaration is enclosed. The Supplemental Declaration does not include the following previously listed inventor(s): \_\_\_\_\_. Please delete this name(s) because the person(s) is not an inventor of the presently claimed invention.

Date: 6/12/98

Signature:

  
R. Michael Ananian  
Registration No. 35,050

Address of Signer:

FLEHR HOHBACH TEST  
ALBRITTON & HERBERT LLP  
4 Embarcadero Center, Suite 3400  
San Francisco, CA 94111-4187  
Telephone (650) 494-8700

- Inventor(s)  
 Assignee of complete interest  
 Attorney or agent of record  
 Filed under Section 1.34(a)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:  
Kramer

Serial No. 08/858,737

Filed: 19 May 1997

For: *A Force Feedback and Texture  
Simulating Interface Device*

Group Art Unit: 3617

Examiner: Underwood, Donald W.

Attorney Docket No. A-65052-3/BIR/RMA  
VIRT-002-3

CERTIFICATE OF FACSIMILE/MAILING

I hereby certify that this correspondence is being faxed to Examiner J. Russell at 703-305-3014 and confirmation is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on 28 May 1998

Signed

Lydia E. Epps

jc617 U.S. PTO  
09/439766  
11/15/99

AMENDMENT AFTER FINAL

**BOX: AF**

Assistant Commissioner for Patents  
Washington D.C. 20231

Sir:

In response to the FINAL REJECTION of 12 March 1998, Applicant's Attorney makes the following amendments. Please amend the application as follows:

IN THE SPECIFICATION:

At page 10, last line, change "5a-5h" to --5a-5l--.

IN THE CLAIMS:

Cancel Claims 1 - 14 without prejudice.

Please add the following claims:

--15. A device for applying a force between first and second portions of an animate body, said device comprising:

first and second link assemblies associated with said first and second portions, respectively, each link assembly comprising:

a. a supporting section secured in position on a portion, each supporting section being a supporting link; and

b. an articulated link attached through a joint to each of said supporting links; wherein said articulated links of said first and second link assemblies are attached to each other through a pivot joint; a casing attached to a link in said second link assembly; and  
a tendon extending through said casing and attached to a link in said first link assembly;  
whereby when a force is generated in said tendon, said tendon acts to apply a force between said supporting sections resulting in applying a force between said first and second portions of said animate body.

16. A device according to Claim 15, wherein said casing is attached to the supporting section of said first link assembly.

17. A device according to Claim 16, wherein said tendon is attached to the supporting section of said second link assembly.

18. A device according to Claim 16, wherein said tendon is attached to the articulated link of said second link assembly.

19. A device according to Claim 15, wherein said casing is attached to the articulated link of said first link assembly.

20. A device according to Claim 19, wherein said tendon is attached to the supporting section of said second link assembly.

21. A device according to Claim 19, wherein said tendon is attached to the articulated link of said second link assembly.

22. A device according to Claim 15, further comprising a goniometer in functional relationship with a joint.

23. A device according to Claim 15, further comprising a force-generating means attached to said tendon for generating a force between the link-attached end of said tendon and said casing.

24. A device for applying a force between first and second portions of an animate body, said device comprising:

first and second link assemblies associated with said first and second portions, respectively, each said first and second link assembly comprising:

a. a supporting section secured in position on a portion, each supporting section being a supporting link; and

b. an articulated link attached through a joint to each of said supporting links;

wherein said articulated links of said first and second link assemblies are attached to each other through a pivot joint, with said articulated link of said first assembly extending beyond said pivot point;

first and second casings attached to a link in said second link assembly; and

first and second tendons extending through said first and second casings, respectively, and attached to a link in said first link assembly, wherein one of said tendons is attached to said articulated link in said first assembly on one side of said pivot joint and the other tendon is attached to said articulated link in said first link assembly on the opposite side of said pivot joint;

whereby when a force is generated in a tendon, such tendon acts to apply a force between said supporting sections resulting in applying a force between said first and second portions of said animate body.

25. A device according to Claim 24, further comprising a goniometer in functional relationship with a joint.

26. A device according to Claim 24, further comprising a force-generating means attached to a tendon for generating a force between the link-attached end of said tendon and associated casing.

27. A device according to Claim 24, wherein said animate body is a hand.

28. A device according to Claim 15, wherein said animate body is a hand.

29. A device for applying a force between first and second portions of a hand, one of said portions being a phalanx, said device comprising:

first and second link assemblies associated with said first and second portions, respectively, each link assembly comprising:

a. a supporting section secured in position on a portion, each supporting section being a supporting link; and

b. an articulated link attached through a joint to each of said supporting links; wherein said articulated links of said first and second link assemblies are attached to each other through a pivot joint, with said articulated link of said first assembly extending beyond said pivot point;

first and second casings attached to said second articulated link in said second link assembly;

first and second tendons extending through said first and second casings, respectively, and attached to a link in said first link assembly, wherein one of said tendons is attached to said articulated link in said first assembly on one side of said pivot joint and the other tendon is attached to said articulated link in said first assembly on the opposite side of said pivot joint;

whereby when a force is generated in a tendon, such tendon acts to apply a force between said supporting sections resulting in applying a force between said first and second portions of said animate body.--

#### REMARKS

Applicant respectfully requests entry of the proposed amendment and examination of the newly presented claims on their merits. These amendments were not presented earlier because applicant apparently and inadvertently neglected to submit amended claims different from those in the earlier parent application in the preliminary amendment during a period of time when responsibility for prosecuting the application was in transition. Applicant canceled all earlier claims to overcome the double patenting rejection for the "same invention", and the new claims correct the 35 U.S.C. 112 issues that may have been raised by the earlier claims. Applicant notes that although the Examiner's rejection mentions a "Claim 14" of the present application, yet refers only to Claims 1-13 on the first sheet of the present Office Action. Applicant has therefore numbered the new claims beginning with Claim 15. In the event the Applicant has misconstrued the prosecution record, the Examiner is invited to renumber the newly added claims.

Applicant further submits that the newly added claims are patentable over the cited references (Zarudiansky '138). Although '138 may arguably suggest a master arm which is provided with elements capable of transmitting parameters detected by the slave arm back to the hand of the operator, including force, pressure, couple, and temperature, the structure and function of the Zarudiansky '138 apparatus is different than that now claimed.

For example, independent Claim 15 requires a device for applying a force between first and second portions of an animate body (such as for example a hand), where the device includes first and second link assemblies associated with the first and second portions of the animate body and where each of the link assembly includes both: a supporting section secured in position on a portion of the animate body and being a supporting link, and an articulated link attached through a joint to each of the supporting links. The articulated links of the first and second link assemblies are attached to each other through a pivot joint. The claimed device is further required to have a casing attached to a link in the second link assembly; and a tendon extending through the casing and attached to a link in the first link assembly. During operation, this structure provides that when a force is generated in the tendon, the tendon acts to apply a force between the supporting sections which results in applying a force between the first and second portions of the animate body. Applicant submits that Zarudiansky '138 neither discloses nor suggests the recited structure so that neither the 35 U.S.C. 102 nor the 35 U.S.C. 103 rejection can be maintained.

Claims 16-23, dependent from Claim 15, are patentable for at least the same reasons as the underlying base Claim 15, and further because each adds additional distinguishing structure. Independent Claim 24, defines the invention in a manner analogous to its definition in Claim 15, and is patentable over the cited art for the same reasons. Zarudiansky '138 simply does not disclosure or suggest the claimed structure. Each of the claims dependent from Claim 25, that is claims 25-29, is patentable over Zarudiansky for at least the same reason as the underlying invention and further because it requires additional elements.

Applicant acknowledges the need for amended drawings that provide for lower case letter designations in the figure references, but requests that any requirement for amended drawings be delayed until patentable subject matter is identified. At that time, Applicant will submit formal drawings that remedy the inconsistency in capitalization.

In view of the above amendments and the following remarks, the Examiner is respectfully requested to withdraw the Final Rejection and reconsider the claims with an eye toward allowance.

In the event the Examiner identifies additional issues that would preclude passing the application to allowance, the Examiner is respectfully requested to withdraw the rejections and pass this application to issue. Failing this, Examiner is respectfully requested to enter the above amendments for purposes of

further procedure. If, in the opinion of the Examiner, a telephone call would expedite prosecution of the subject application, the Examiner is invited to call the undersigned at (650) 494-8700.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 06-1300 (order No. A-65052-3/BIR/RMA). A duplicate copy of this sheet is enclosed for such purpose

Respectfully submitted,  
FLEHR HOHBACH TEST  
ALBRITTON & HERBERT LLP

By:

R. Michael Ananian

R. Michael Ananian  
Reg. No. 35,050

4 Embarcadero Center, Suite 3400  
San Francisco, CA 94111-4187  
(650) 494-8700  
(106782)

11/15/99  
JC617 U.S. PTO

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

**Kramer, J.**

Serial No. 08/858,737

Filed: 19 May 1997

For: *A Force Feedback and Texture  
Simulating Interface Device*

Art Unit: 3652

Examiner: Underwood, D.

Atty Docket No.:A-65052-3/RMA

Date: 13 September 1999

jc617 U.S. PTO  
09/439766

11/15/99

CERTIFICATE OF MAILING

*I hereby certify that this correspondence is being sent via U.S. Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on Monday 15 November 1999*

Signed: R. Michael Ananian  
R. Michael Ananian

**PROVISIONAL PETITION FOR EXTENSION OF TIME**

Assistant Commissioner of Patents  
Washington, DC 20231

Sir:

In the event that the Commissioner determines that additional extension of time is required to maintain pendency of the above captioned application during the period of time in which an Appeal Brief is due beyond the one-month petition already filed, Applicant hereby petitions for an additional Extension of Time, and authorizes the Commissioner to charge the requisite fee to Deposit Account No. 06-1300 (order No. A-65052-3/RMA) as follows:

	<u>Large Entity</u>	<u>Small Entity</u>
One Month	// \$ 110.00	// \$ 55.00
Two Months	// \$ 380.00	// \$ 190.00
Three Months	// \$ 870.00	/X/ \$ 435.00-\$55.00
Four Months	// \$1360.00	// \$ 680.00

for Applicant to:

- /X/ respond to the Official Action mailed 13 May 1999  
/X/ file a Notice of Appeal in response to a final rejection mailed 13 May 1999;  
/ X/ file an Appeal Brief now due 17 November 1999;  
// other (specify): \_\_\_\_\_

The requisite fee pursuant to 37 C.F.R. 1.17 is:

- // enclosed by Check  
/X/ to be charged to Deposit Account No. 06-1300 (Order No.A-65052-3/RMA). Two copies of this sheet are enclosed.

/X/ Please charge any additional fees or credit any overpayment to Deposit Account No. 06-1300  
(Order No A-65052-3/RMA.). Two copies of this sheet are enclosed.

Respectfully submitted,

FLEHR HOHBACH TEST  
ALBRITTON & HERBERT LLP

By: R. Michael Ananian  
R. Michael Ananian  
Reg. No. 35,050

Suite 3400 Four Embarcadero Center  
San Francisco, CA 94111-4187  
(415) 781-1989

1000427

jc617 U.S.  
11/15/99

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

jc617 U.S. PRO  
09/439766  
11/15/99

In re application of:

Kramer, J.

Serial No. 08/858,737

Filed: 19 May 1997

For: *A Force Feedback and Texture  
Simulating Interface Device*

Art Unit: 3652

Examiner: Underwood, D.

Atty Docket No.:A-65052-3/RMA

Date: 13 September 1999

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being sent via U.S. Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on 13 September 1999

Signed: R. Michael Ananian  
R. Michael Ananian

PETITION FOR EXTENSION OF TIME

Assistant Commissioner of Patents  
Washington, DC 20231

Sir:

Applicant hereby petitions for an Extension of Time, and encloses the fee of:

	<u>Large Entity</u>	<u>Small Entity</u>
One Month	// \$ 110.00	/ X/ \$ 55.00
Two Months	// \$ 380.00	// \$ 190.00
Three Months	// \$ 870.00	// \$ 435.00
Four Months	// \$1360.00	// \$ 680.00

for Applicant to:

// respond to the Official Action mailed 13 May 1999  
 / file a Notice of Appeal in response to a final rejection mailed 13 May 1999;  
// file an Appeal Brief now due \_\_\_\_;  
// other (specify): \_\_\_\_\_

The requisite fee pursuant to 37 C.F.R. 1.17 is:

// enclosed by Check  
 / to be charged to Deposit Account No. 06-1300 (Order No.A-65052-3/RMA). Two copies of this sheet are enclosed.

/X/ Please charge any additional fees or credit any overpayment to Deposit Account No. 06-1300 (Order No A-65052-3/RMA.). Two copies of this sheet are enclosed.

Respectfully submitted,

FLEHR HOHBACH TEST  
ALBRITTON & HERBERT LLP

By: R. Michael Ananian  
R. Michael Ananian  
Reg. No. 35,050

Suite 3400 Four Embarcadero Center  
San Francisco, CA 94111-4187  
(415) 781-1989  
140070

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Art Unit: 3652

Kramer, J.

Examiner: Underwood, D.

Serial No. 08/858,737

**NOTICE OF APPEAL**  
Atty Docket No.:A-65052-3/RMA

Filed: 19 May 1997

Date: 13 September 1999

For: *A Force Feedback and Texture  
Simulating Interface Device*

CERTIFICATE OF MAILING

*I hereby certify that this correspondence is being sent via  
U.S. Mail in an envelope addressed to the Assistant  
Commissioner for Patents, Washington, D.C. 20231 on  
13 September 1999*

Signed: R. Michael Ananian  
R. Michael Ananian

**NOTICE OF APPEAL**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Applicant hereby appeals to the Board of Appeals from the Final Rejection mailed 13 May 1999 rejecting Claims 15-30 in this application. Applicant is concurrently requesting by petition a one-month extension of time.

The Commissioner is hereby authorized to charge the requisite *small entity* fee for a Notice of Appeal of \$150.00 and any additional fees, including fees for additional extensions of time, or credit any overpayment to Deposit Account No. 06-1300 (Order no. A-65052-3/RMA).

Respectfully submitted,

FLEHR HOHBACH TEST  
ALBRITTON & HERBERT LLP

By R. Michael Ananian  
R. Michael Ananian  
Reg. No. 35,050

FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP  
Four Embarcadero Center, Suite 3400  
San Francisco, CA 94111-4187  
Telephone: (650) 494-8700  
Facsimile: (650) 494-8771

140071